75TH MORSS
US Naval Academy
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Through Multiple Disciplines, Analytical Power

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Space Professional Billet Analysis for the US Air Force

Mr Doug Anding
Mr Dave Boyer
Scitor Corporation
1 May 07

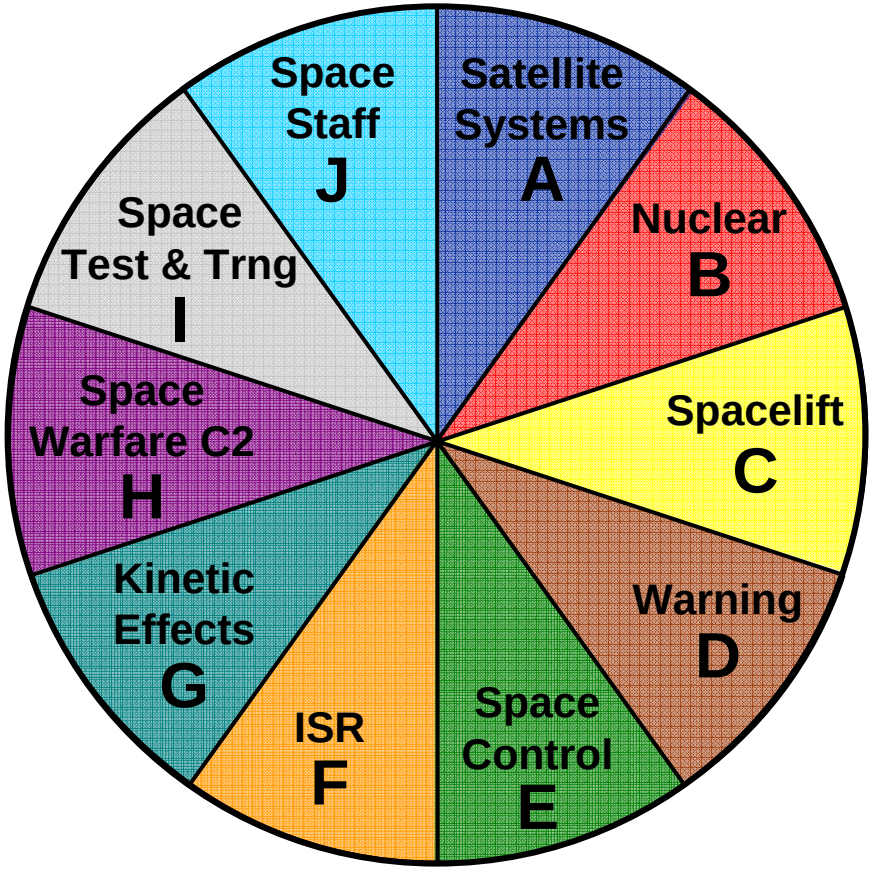
Overview

- **Purpose**
- **Space Experience Codes (SPECs)**
- **Assumptions**
- **Analysis of Core Space Professional (SP) Billets**
- **Potential SPEC Groups**
- **Observations**

Purpose

- **Ensure an appropriate number of SP positions with the right experience prerequisites are available to satisfy mission capabilities for each officer grade within each SPEC**
- **Determine if relationships among SPECs define SPEC groups (career paths)**

SPECs

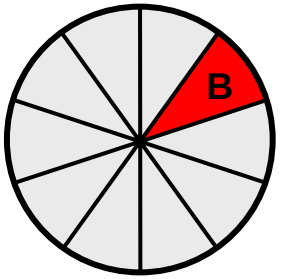


- **Common definition for individual qualifications, job requirements**
- **Three characters**
  - **1st: Functional code [A,O,S]**
    A-Acq; O-Ops; S-Staff
  - **2nd: Mission code [A-J]**
  - **3rd: Experience Identifier [0-9]**
- **Tracked and cataloged**

SPEC Examples

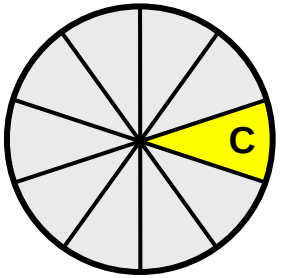
AFSC: 13S
Duty title: ICBM Combat Crew CC
Duty location: Minot AFB

O – Operations
B – Nuclear
1 – Missile Systems



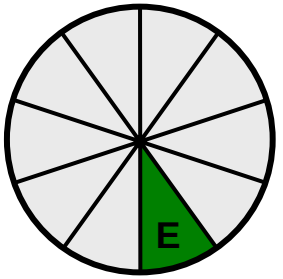
AFSC: 62E
Duty title: Delta IV Mission Mgr
Duty location: Los Angeles AFB

A – Acquisition
C – Spacelift
2 – Launch Systems



AFSC: 1C6
Duty title: NCOIC, Space Control Plans
Duty location: Peterson AFB (AFSPC)

S – Staff
E – Space Control
1 – Ground Based Surv



SPEC Breakout

C-Spacelift

C: Spacelift				
0: Multi Systems	**1: Range Systems**	**2: Launch Systems**	**3 SLEC-P**	**4: Spaceflight**
Wing/CC Ops Gp/CC	Western Launch Range	Delta	SLEC-P	Astronauts Pilots/Mission Spec
OSS/CC/DO	Eastern Launch Range	EELV		
OGV Chief (Gp and below)	Range SPO	Titan		
LCG CC/DO		Titan		
LCSS CC/DO		Atlas		
		Shuttle		
		EELV SPO		
		Launch SPO		
		6595 ATG/1 ASTS		
		SMC Det 8		
		SMC Det 9		
		SMC Det 12		
		14 AF Launch		
		RSA II		
		RSLP		

Approach

- **Review 5,443 CSP billets--core 13S, 61S, 62E, and 63A**
- **Billets are broken out by SPEC and rank, illustrating:**
  - **Total billets**
  - **Total billets with prerequisite SPECs (P/SPEC)**
  - **P/SPEC requirements from within the same SPEC**
  - **P/SPEC requirements from other SPECs**
  - **P/SPEC requirements to other SPECs**
- **Review P/SPEC linkage among SPECs to determine groups**
- **P/SPECs are derived from the Millennium database job description for each position**
- **32.3% of positions have job descriptions which are considered valid**

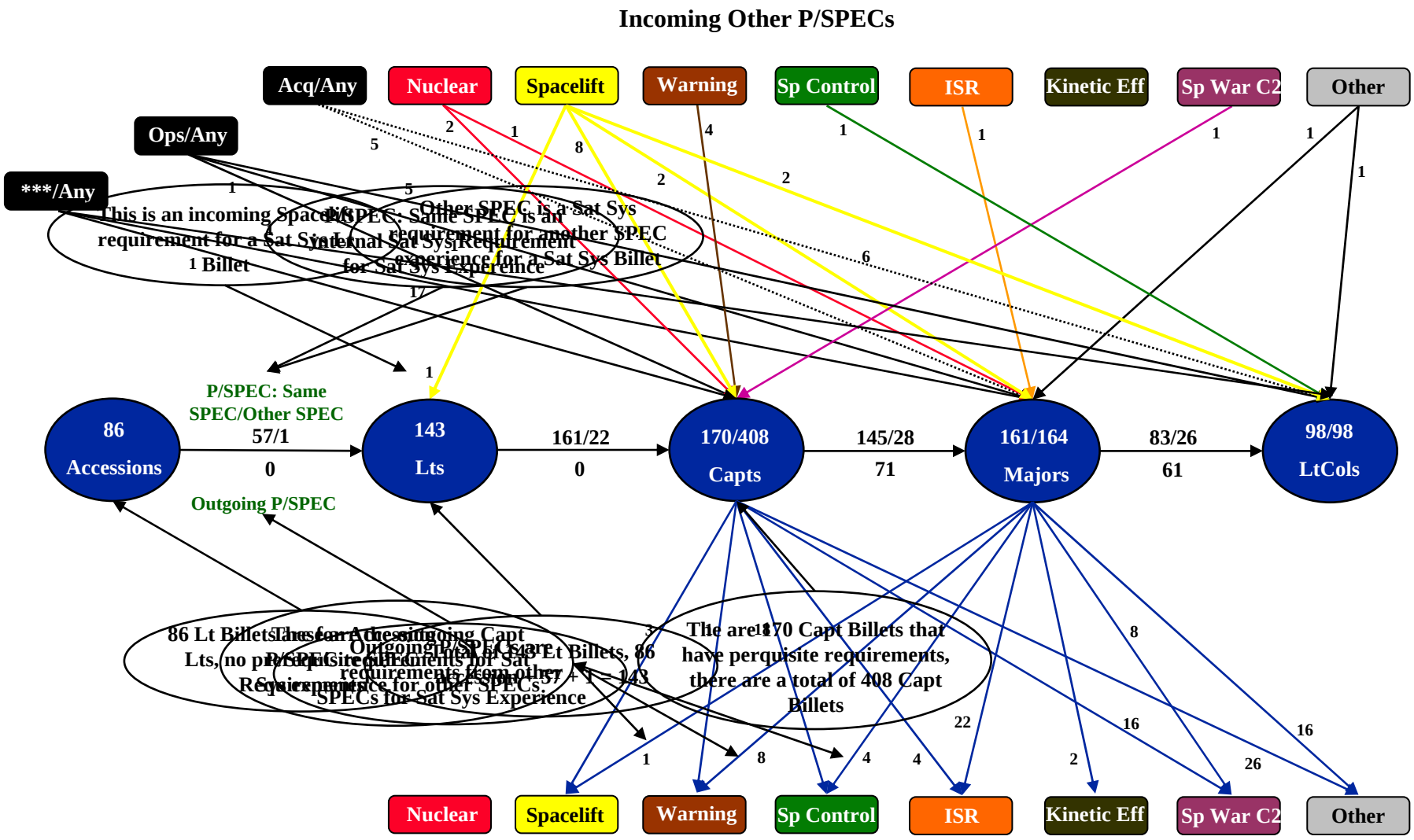
Assumptions

- **Multiple P/SPECS for a position are additional requirements, not substitute requirements**
- **Experience is not quantified in the job descriptions, so *any* experience in the SPEC is sufficient**
- **Career progression patterns (“paths”) identified as a result of the analysis are based on P/SPEC linkage between SPECs.**
- **Job description information is considered reliable for the purpose of this analysis, i.e., any subjectivity injected by the POC or potentially outdated material cannot be determined**

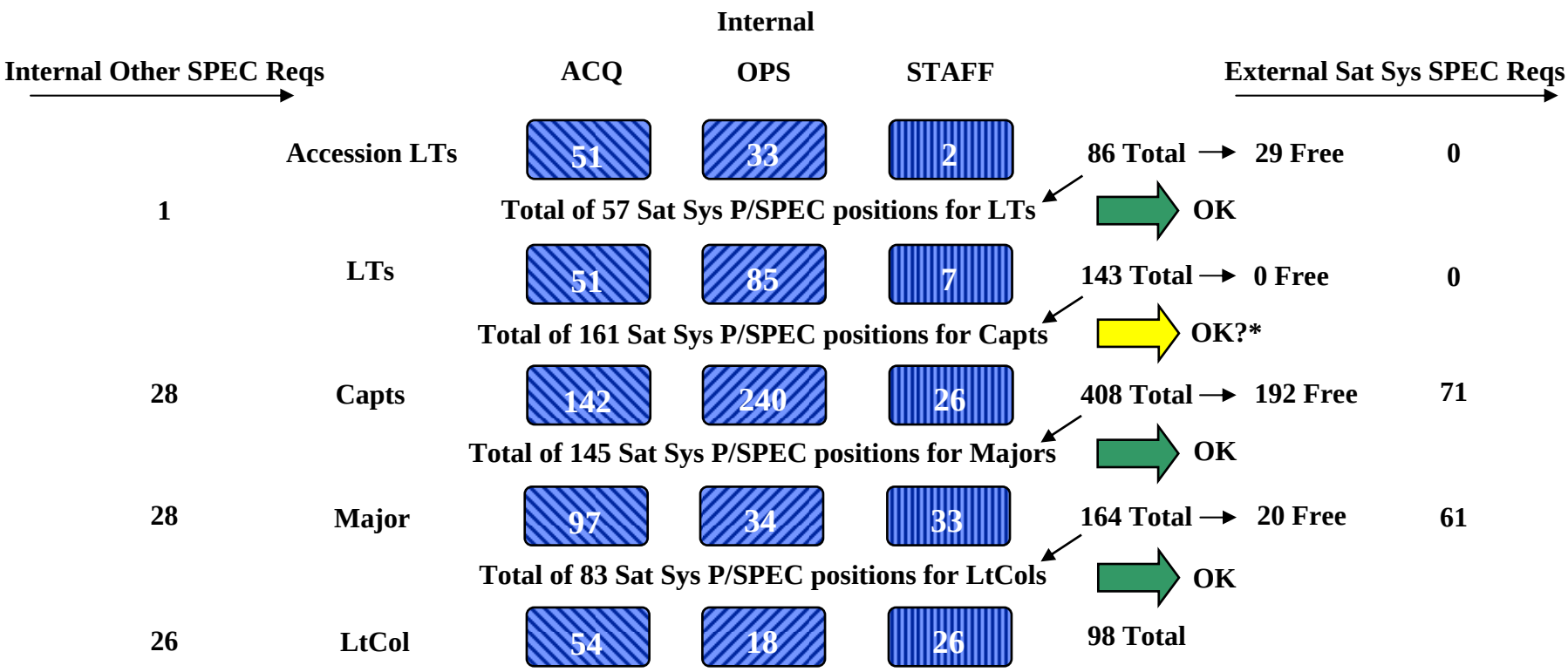
SP Positions

- **Positions that require an understanding of space systems and capabilities with duty directly associated with space system operation, acquisition or sustainment; or the exploitation of information obtained via space systems**

Relationships Satellite Systems



Satellite Systems Lt through LtCol



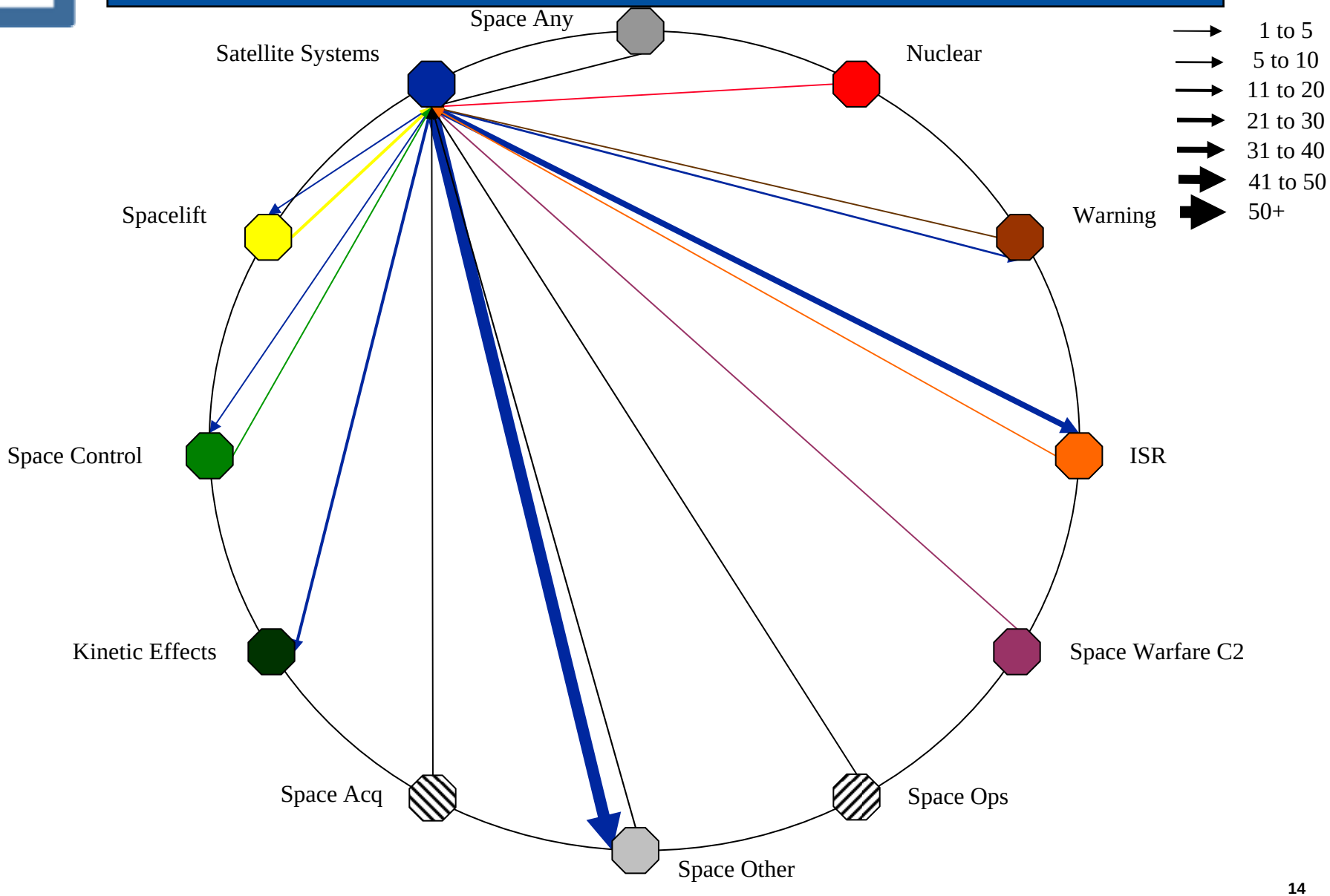
Satellite Systems can support all internal and external requirements

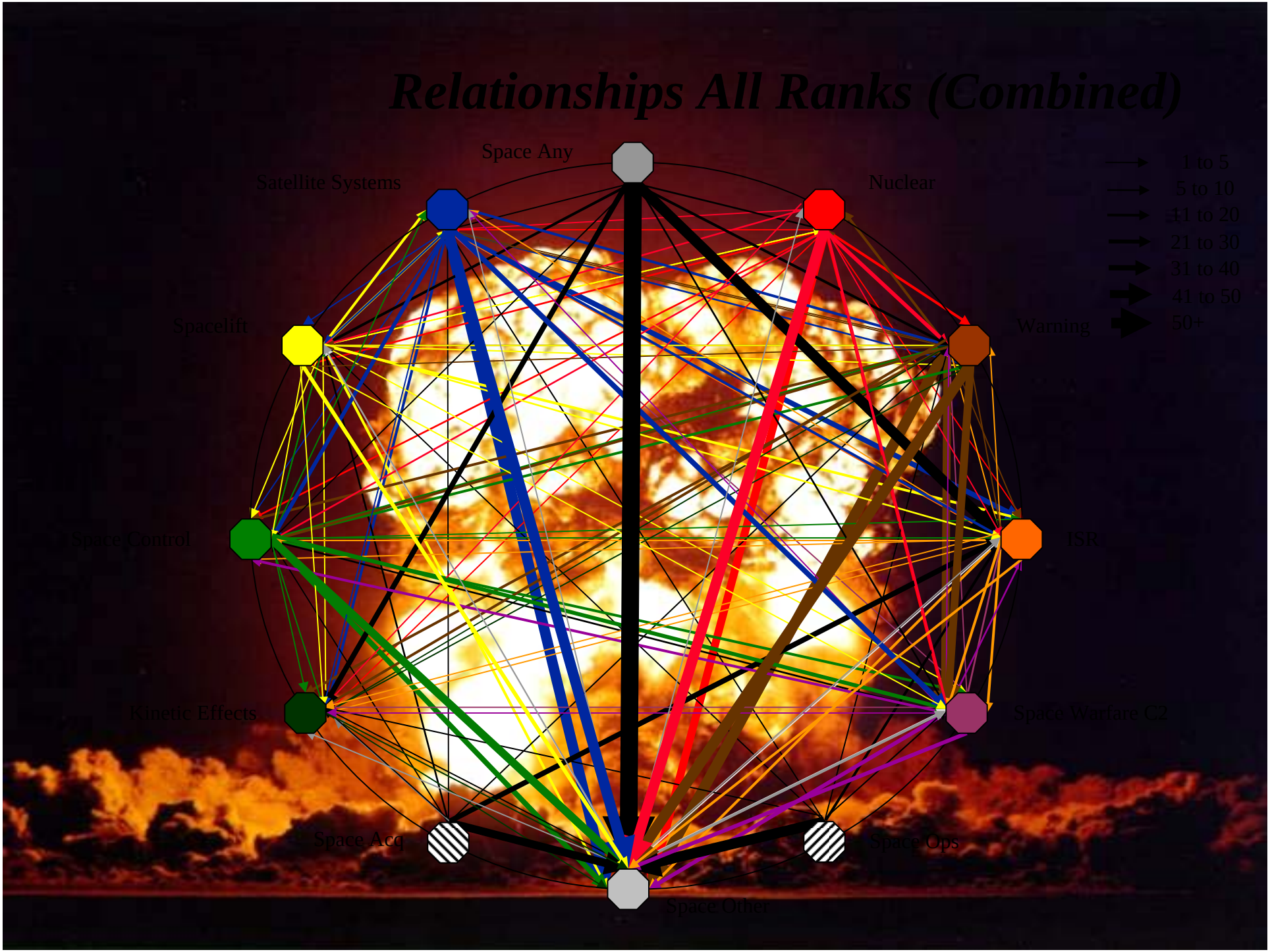
*** = Yes, Capts also fill Capt Reqs**

Satellite Systems Validation

	A Int	T Billets	Free	A Ext	Available
A	446	813	367	132	235
B				3	
C				5	
D				11	
E				25	
F				36	
G				2	
H				33	
I				60	
Total (B – I)					175
Difference (A – Total)					60

Relationships Sat Sys




Relationships All Ranks (Combined)
Space Any
Satellite Systems
Nuclear
Spacelift
Warning
Space Control
ISR
Kinetic Effects
Space Warfare C2
Space Acq
Space Ops
Space Other
1 to 5
5 to 10
11 to 20
21 to 30
31 to 40
41 to 50
50+

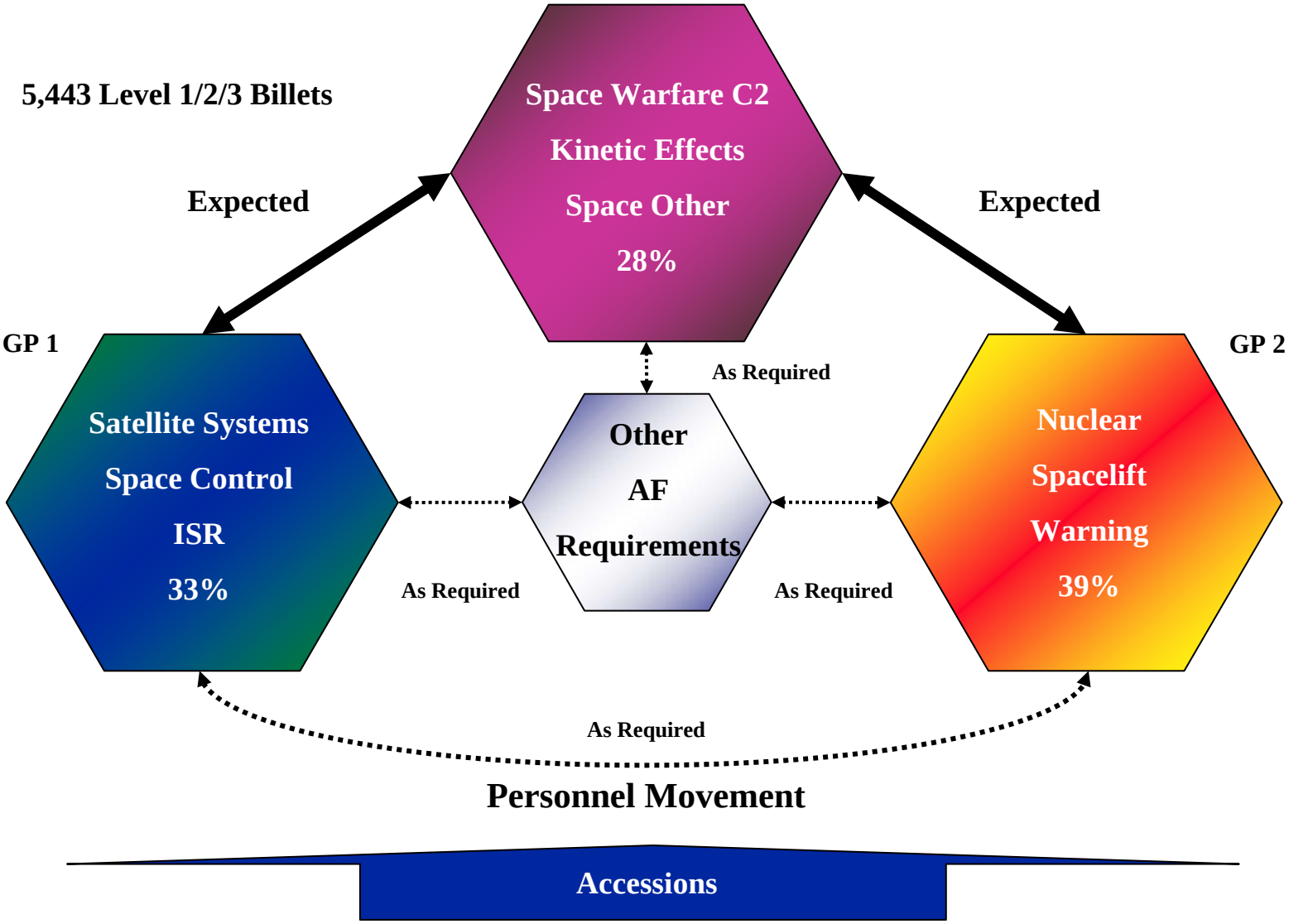
SPEC Groups Assumptions

- **There is significant P/SPEC interrelation among billets – almost all billets are interrelated to some extent**
- ***Space Warfare C2, Kinetic Effects and Space Other* have significant P/SPEC requirements and are follow-on type positions (very few accession-type positions and are typically HQ and Staff positions), therefore, these SPECs are not included in the analysis of potential SPEC groups (SPECs G, H, and I)**
- **A combination of groups is a Set**
- **A combination (or just one) of several SPECs is a Group**
- **Determination of the SPEC Groups is based on similar duty functions (Set 1) or balancing the number of billets in a group based on internal/external SPEC requirements based on computer analysis (Sets 2 – 11)**

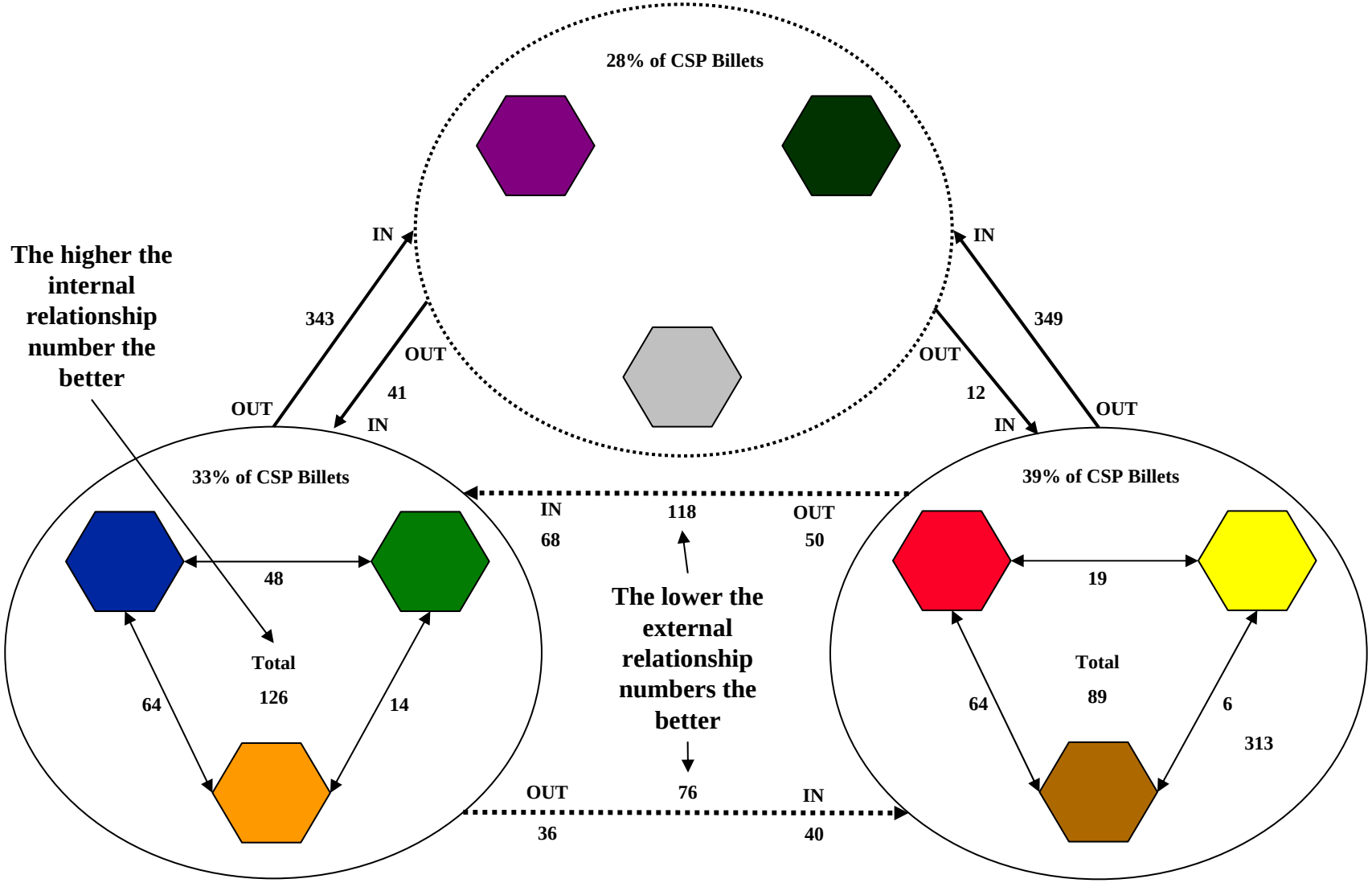
Potential SPEC Groups Assumptions Con't

- **An optimized SPEC group is characterized by a high number of internal P/SPECs and a low number of external P/SPECs**
- **Personnel will still be required to cross between groups**

SPEC Set 1 Groups 1/2



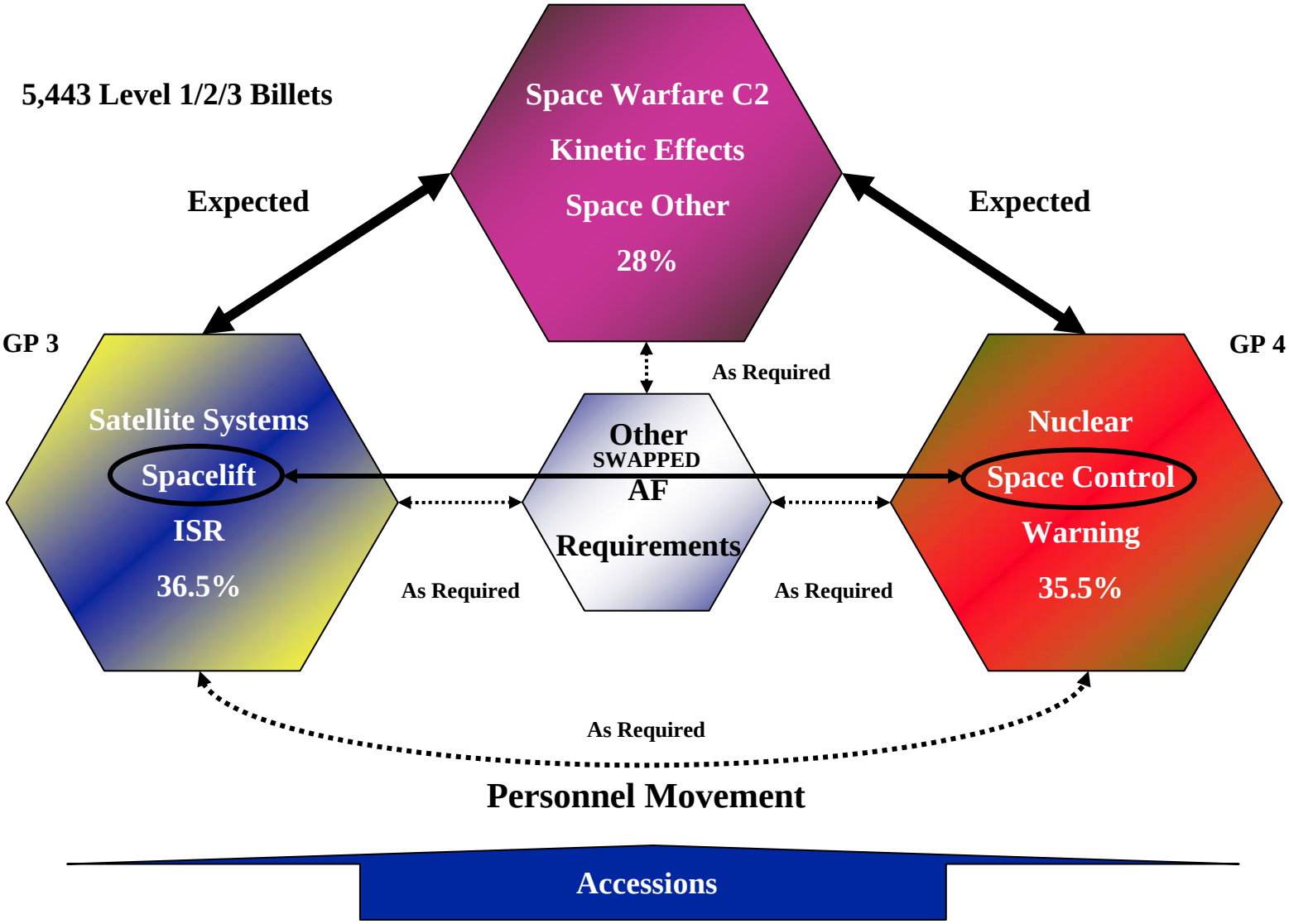
SPEC Set 1 Grouping 1/2 All Levels



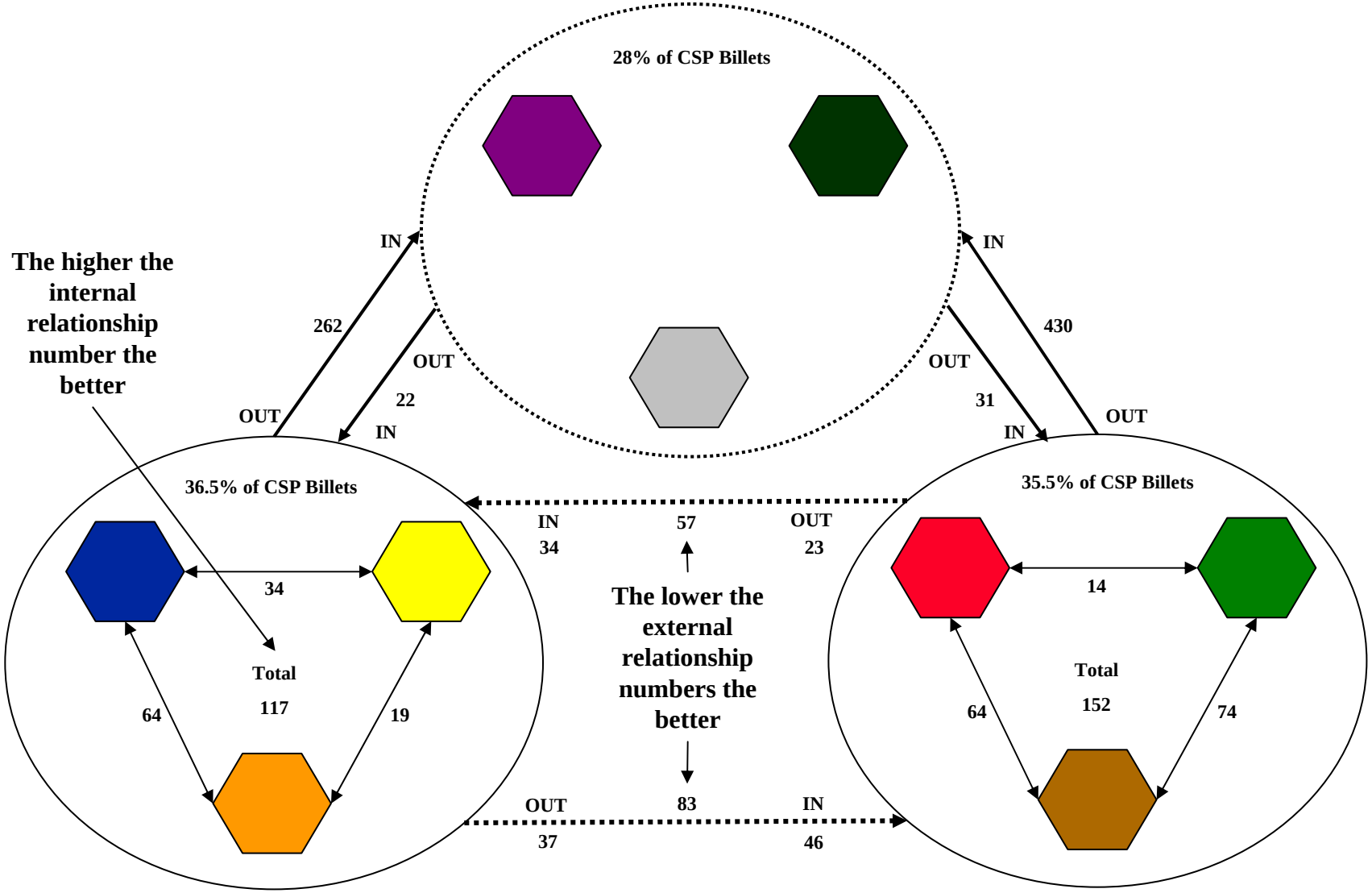
Observations Set 1 Group 1/2

- **Groups based on like duties--*Sat Sys/Sp Cont/ISR* (Group 1) and *Nuke/Lift/Warn* (Group 2) seem viable**
  - **Both groups tie into the remaining SPECs: *Sp War C2/Kinetic Eff/Sp Other***
  - **Group 1 does Sat C2, satellite payload management and space control operations**
  - **Group 2 does time-critical/checklist-driven operations**
  - **Ground Based Warning and Space Surveillance perform similar functions**
- **There are still requirements for movement among the two groups (1/118 2/76), these numbers are higher than group 3/4 (3/57 4/83) and group 5/6 (5/94 6/69)**
- **The internal requirements of 1/126 and 2/89 is not the optimal grouping (does not rank in the top ten)**

SPEC Set 2 Groups 3/4



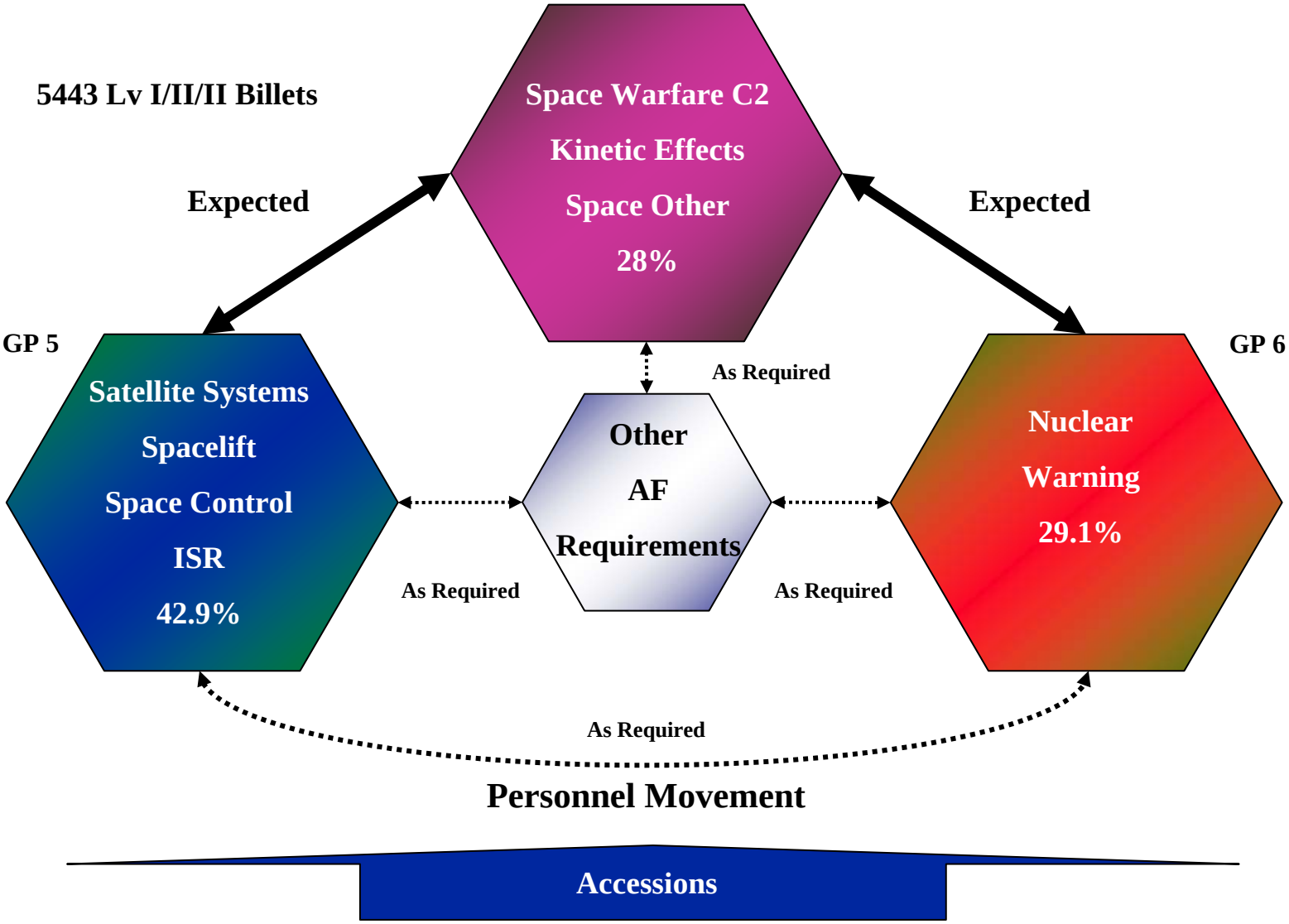
SPEC Set 2 Grouping 3/4 All Levels



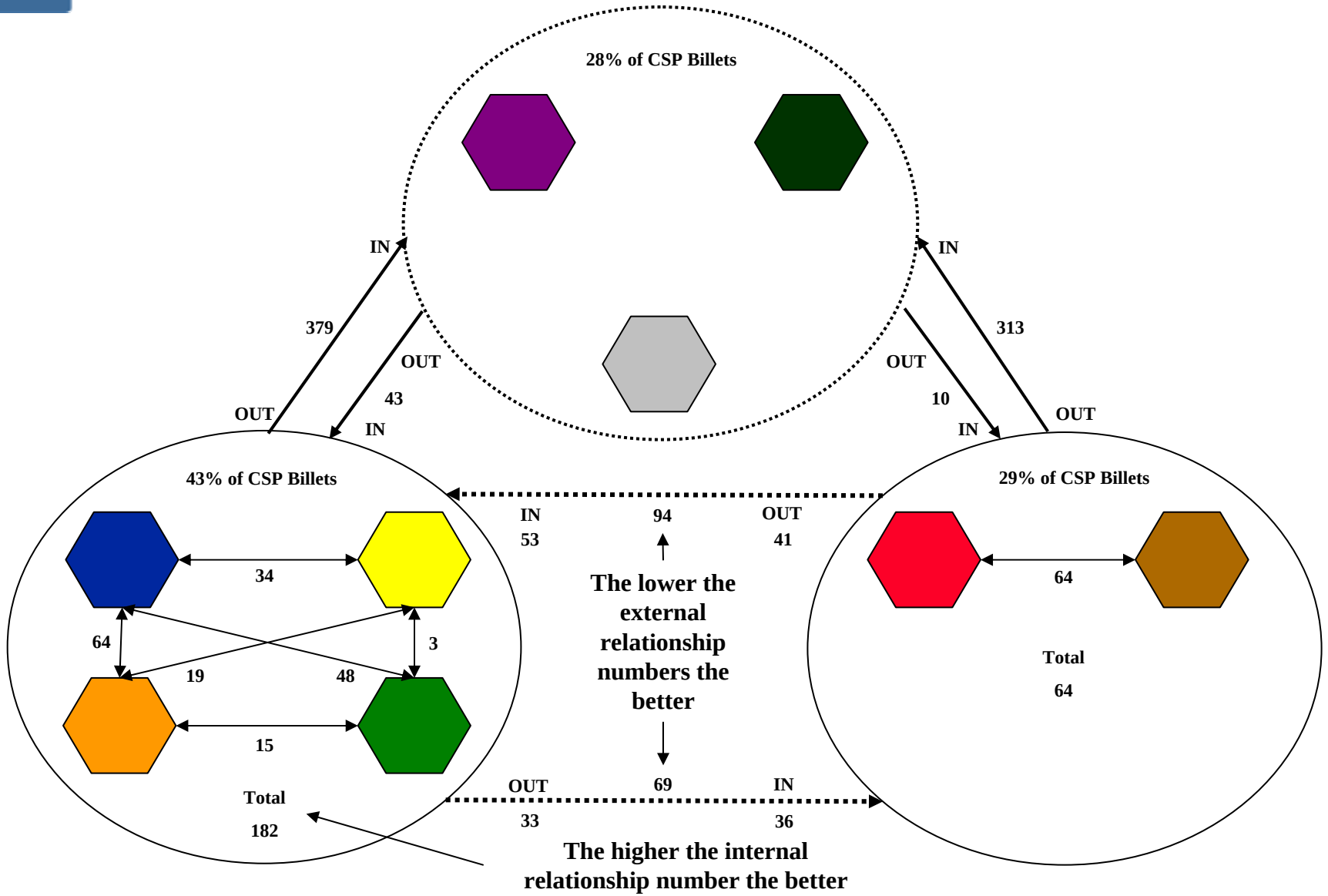
Observations Set 2 Group 3/4

- **Groups based on billet numbers of *Sat Sys/Lift/ISR* (Group 3) and *Nuke/Sp Cont/Warn* (Group 4) seem viable as well**
  - **Group 3 does Sat C2, satellite payload management and spacelift operations**
  - **Group 4 does time-critical/checklist-driven operations**
  - **Ground Based Warning and Space Surveillance perform similar functions**
- **There are still requirements for movement between the two groups (1/57 2/83) but this is less than between group 1/2, showing more compartmentalized groups**
- **The internal requirements of 3/115 and 4/151 is the optimal grouping for sets with two or more SPECs in a group**

SPEC Set 3 Groups 5/6



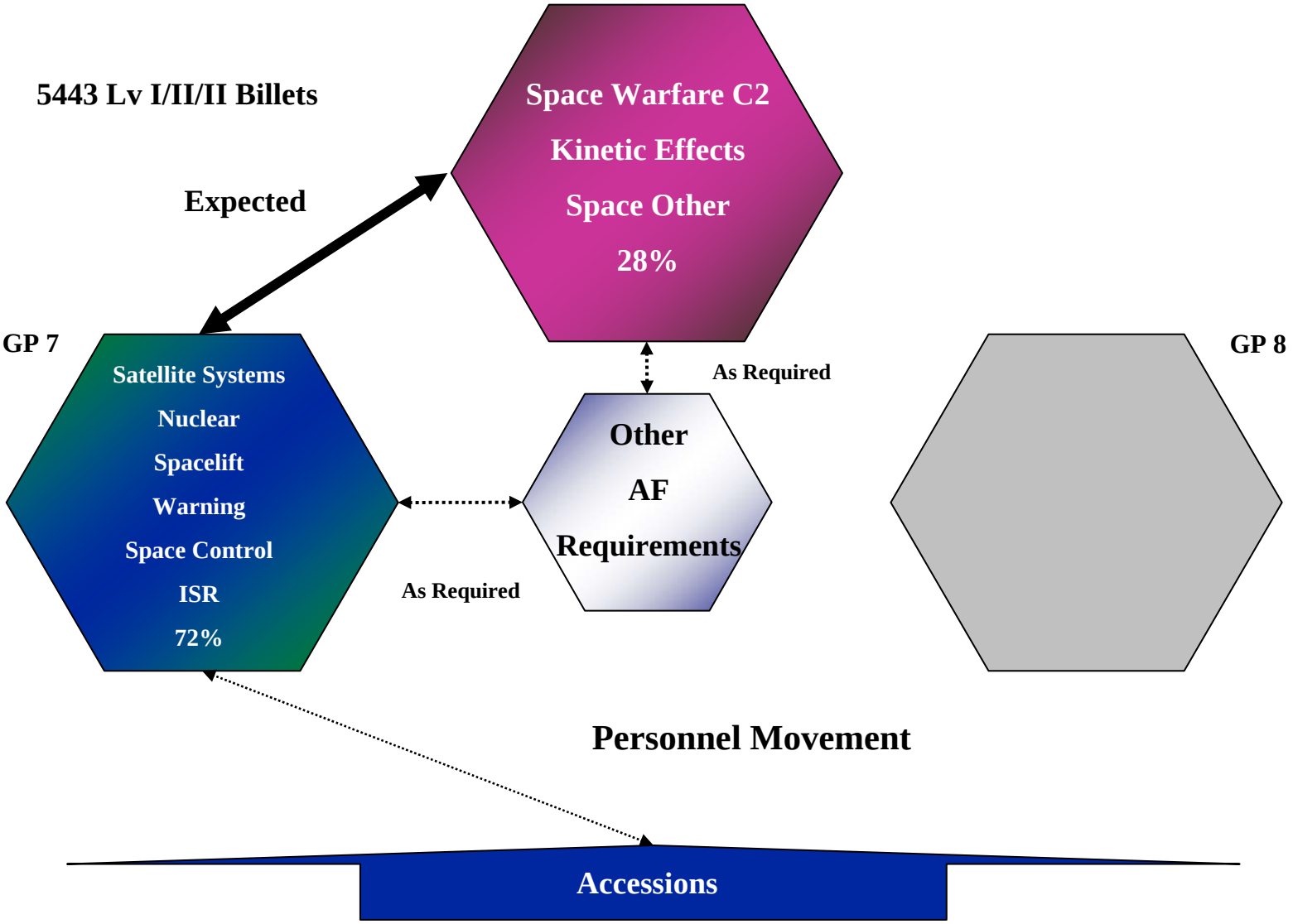
SPEC Set 3 Grouping 5/6 All Levels



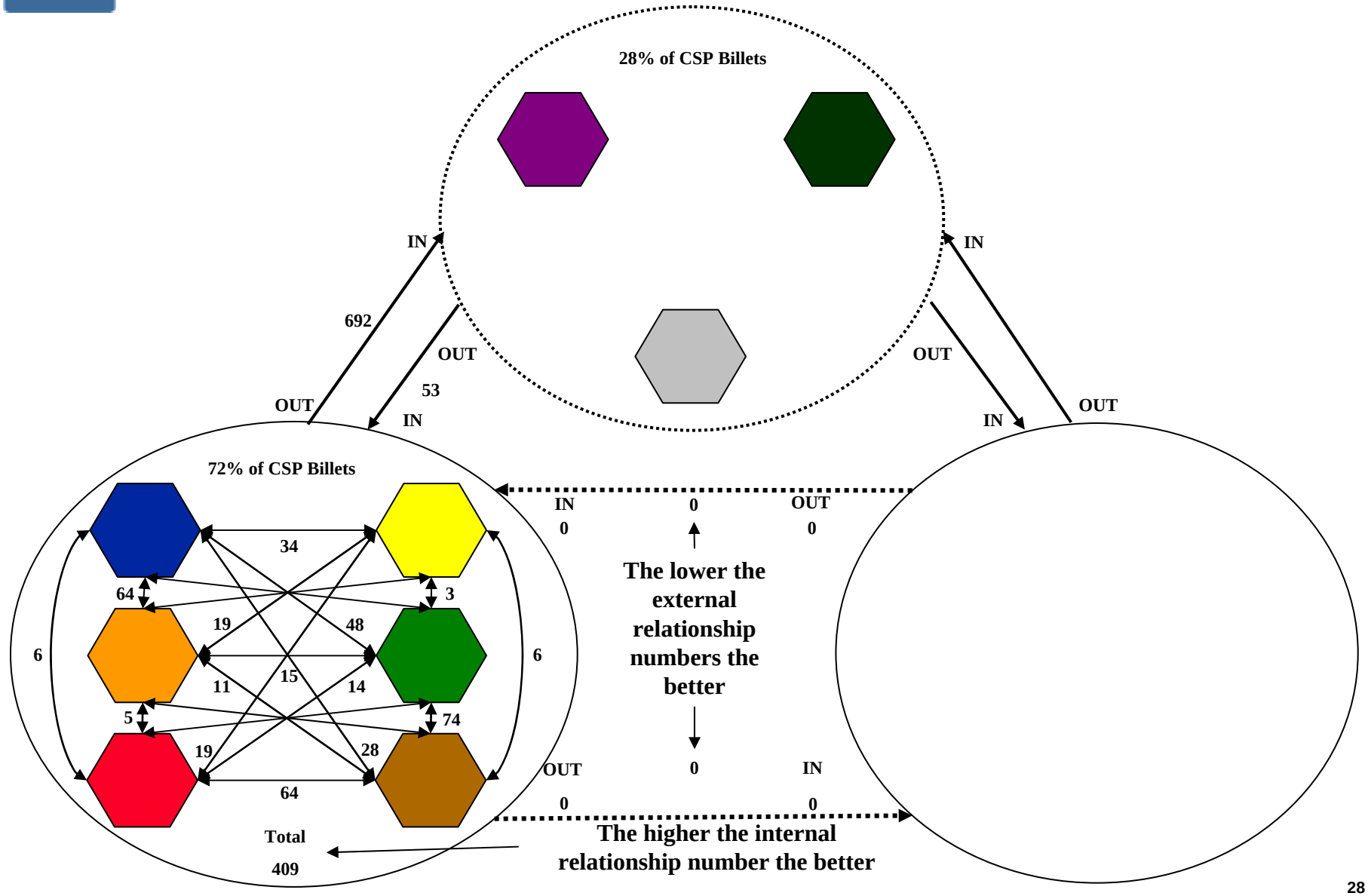
Observations Set 3 Group 5/6

- **Groups based on billet numbers of *Sat Sys/Lift/ISR/Sp Cont* (Group 5) and *Nuke/Warn* (Group 6) seem viable as well**
  - **Group 5 does Sat C2, satellite payload management, spacelift operations and space control ops**
  - **Group 6 does time-critical/checklist-driven operations**
  - **Ground Based Warning and Space Surveillance perform similar functions but are now in different groups**
- **There are still requirements for movement between the two groups (5/94/ 6/69), higher than group 3/4 (3/57 4/83) and slightly less than between group 1/2 (1/118 2/76) showing less compartmentalization than group 3/4 but more than group 1/2**
- **The internal requirements of 5/182 and 6/64 is not the optimal grouping (ranked seven out of ten)**

SPEC Set 4 Groups 7/8



SPEC Set 4 Grouping 7/8 All Levels



Observations Set 4 Group 7/8

- **This Group places *Sat Sys/Lift/ISR/Sp Cont/Nuke/Warn* all together**
- **No requirements for movement between another group (no other group) and all requirements are internal**
- **This is how business in currently done and there is no optimization**
- **The internal requirements of 7/409 is the number one optimal grouping (ranked one out of ten), but this set only has the one group**

Observations All Groups, All Levels

This chart shows the top ten computer ranked groupings plus one based on like duty functions, the computer ranking number is shown in the first row under the group number

The higher the Internal Requirements number the better, the lower the External Requirements number the better

	Set 1		Set 2		Set 3		Set 4		Set 5		Set 6		Set 7		Set 8		Set 9		Set 10		Set 11	
	GP 1	GP 2	GP 3 *5*	GP 4	GP 5 *7*	GP 6	GP 7 *1*	GP 8	GP 9 *2*	GP 10	GP 11 *3*	GP 12	GP 13 *4*	GP 14	GP 15 *6*	GP 16	GP 17 *8*	GP 18	GP 19 *9*	GP 20	GP 21 *10*	GP 22
SPECS	A E F	B C D	A C F	B D E	AC EF	B D	AB CD EF		AB DE F	C	AC DE F	B	AB CD E	F	AB DE	C F	AB CF	DE	A F	BC DE	AC DE	B F
Int Req	126 10	89 12	117 11	152 8	182 6	64 14	409 1		328 2	0 16	301 3	0 16	296 4	0 16	234 5	19 15	147 9	74 13	64 14	180 7	182 6	64 14
Ext Req	118 19	76 10	57 8	83 13	94 15	69 9	0 1		32 4	49 6	27 3	81 12	101 16	12 2	114 17	42 5	134 21	54 7	87 14	78 11	69 9	94 15
Total	29	22 51	19	21 40	21	23 43	2	2	6	22 28	6	24 30	20	18 38	22	20 42	30	20 50	28	18 46	15	29 44

The 1st number shown in a box is the number of interactions for that group followed by a ranking number used to determine the overall ranking of a group. Add the ranking numbers for the Int Req/Ext Req for a group. Then add both groups to get the overall ranking for the Set. The top five lowest groups are highlighted showing the optimal groupings

Conclusion: Discounting Set 4 with one large group (7/8) and the Sets with five SPECs in one group and one in the other (9/10, 11/12, 13/14) the optimal Set with multiple SPECs in each group is <u>Set 2</u>

Observations

- **In comparing all the Sets 1 - 11, all Levels, based on the evaluation criteria of:**

"The higher the Internal Reqs number the better, the lower the External Reqs number the better"

Set 2 Group 3/4 is the most optimized for sets with more than 2 SPECs in a group

- **What this tells us is we have a potentially two viable career paths for personnel one in Satellite Systems, Spacelift, ISR and the other in Nuclear, Warning and Space Control**

Questions?